DE MONTFORT UNIVERSITY LEICESTER

CREATIVE AND CULTURAL INDUSTRIES RESEARCH GROUP

CASE STUDY

Urban Living and Innovation Labs

May | 2018

TEF Gold Teaching Excellence Framework

Innovation spaces

Transdisciplinary knowledge sharing:
people ▪ place ▪ culture business
and technology

Contents

Labs as a Space for Innovation

I argue here for the creation of Labs as the optimal space and building block for conducting research and innovation in today's society.

Labs are conducive for cross-disciplinary research and problem solving, for knowledge sharing, and for providing a supportive environment for innovation. They offer a micro ecosystem or one-stop-space for creativity and open innovation.

A living lab is a research concept and model, increasingly used in successful cities and research environments. It is premised on the creation of user-centred, practice-based, open-innovation spaces, which integrate research and innovation processes within a public-private-people partnership. Where successful, Labs are examples of disruption in practice; disrupting how we learn, how we do research, and how we solve problems.

Examples of laboratories in action are wide-ranging but share core features:

- Experimental approaches in real-life context
- Participation and user involvement
- Collaboration and co-production of knowledge

What is a Lab?

In contrast to a traditional lab or research space – typically in a university or large multi-national company – living and innovation labs operate in a real-life context with a user-centric approach.

The spatial and organisational limits of such a lab are defined by each lab's purpose, scope and context, but the defining characteristic is that they are open spaces, which are inclusive as possible, and that this allows for wide participation and action, co-designing and co-production, and ultimately interdisciplinary solutions.

Whilst the type of Labs now in existence are diffuse, urban living and innovation labs tend to share common values:

1. **Co-creation and Ideation**
   They bring together technology push and application pull into a diversity of views, constraints and knowledge sharing that drives ideation of new scenarios and concepts. Ideation takes place in multi-disciplinary spaces and ideation and innovation is open.

2. **Inclusive Exploration**
   They seek to engage all stakeholders, especially user communities at the earlier stage of the co-creation process for discovering emerging scenarios and identifying problems, usages and behaviours through live scenarios. Exploration takes place in real or virtual environments. Stakeholders come from research, government, industry, and user groups and enable Mode 2 knowledge (research in application).

3. **Experiment and Open Innovation**
   They implement ideas to experience live scenarios with a large number of users while collecting data which will be analysed as part of the research and evaluation process.

4. **Evaluation**
   They assess new ideas and innovative concepts in real life situations through various dimensions such as socio-ergonomic, socio-cognitive and socio-economic aspects; make observations on the potentiality of mainstream (viral) adoption of new concepts and related technologies through a confrontation with users' value models.

A research methodology for sensing, prototyping, validating and refining complex solutions in multiple and evolving real-life contexts.

– Professor William Mitchell | MIT

Ultra Intelligent Research Spaces

The Living Lab process, which integrates user-centred research with open innovation is seen as an ultra intelligent research community, and originates from the creation of a media lab at MIT by Professor William Mitchell.

Mitchell, Larson and Pentland from the Massachusetts Institute of Technology argue that a lab approach provides an optimal space for conducting user-centric research methodology for sensing, prototyping, validating and refining complex solutions in diverse and evolving real life contexts. Hence a living lab constitutes an experimental and experiential environment, where diverse users are immersed in a creative social space for co-designing their own future, for co-developing emerging ideas, and assisting with breakthrough scenarios. In a wider context, living and innovation labs could be used by policy makers for co-designing, exploring, and refining new policy design in real-life scenarios for evaluating their potential impacts as a pilot, before mainstream implementation.

The involvement of diverse stakeholders allows for trans-disciplinary problem-solving and for observing users/testing new ideas. The approach is based on a systematic user co-creation approach integrating research and innovation processes.

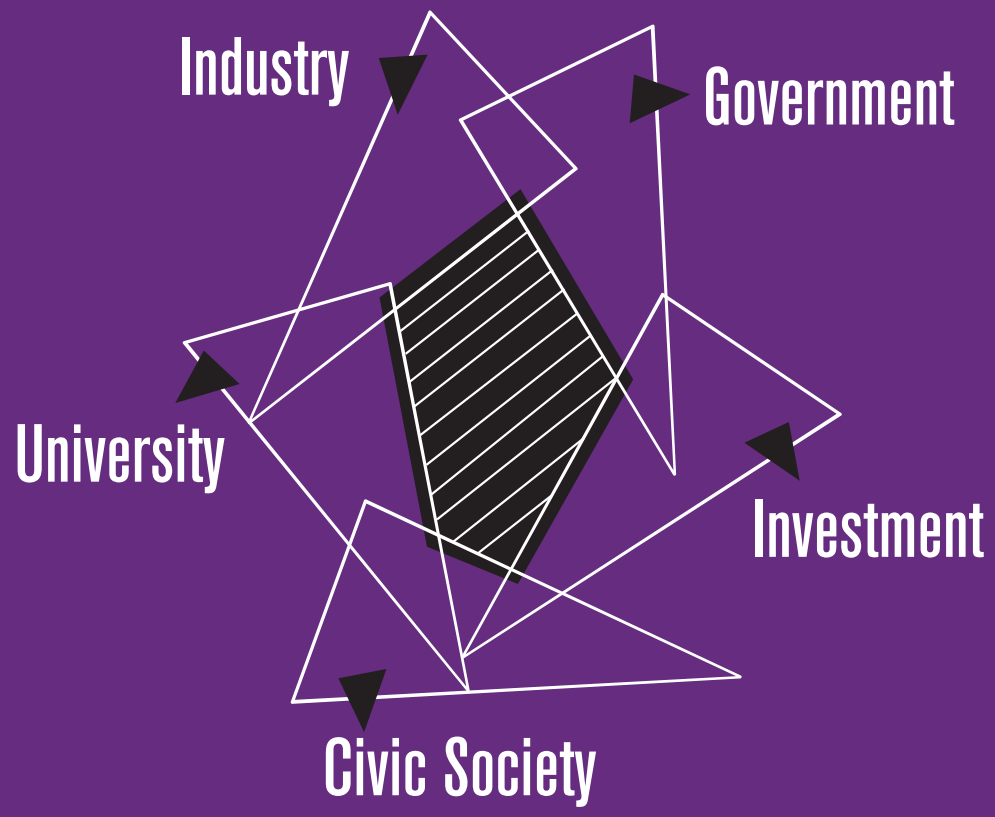

Fig.1 The Combined Interests in a Quintuple Helix

User communities are encouraged to participate in ideation as users and consumers of current problems but also as observed subjects during the implementation on new ideas.

In a conventional innovation system, in which universities are encouraged to develop new ideas in collaboration with policy makers and industry (e.g. Triple Helix model), the Lab model extends the arena to involve users or the civic dimension, providing a mechanism for open innovation and quicker innovation cycles. In essence, Labs allow for multi-lateral relations rather than limiting communication to just 'Industry' and 'Government'.

From a university perspective, Labs provide a focus and space for conducting research in practice and to create applied knowledge. It provides a practical space and current solution for higher education partners, who struggle to engage external partners in a Triple Helix tri-lateral model or for researchers whose research is abstract. The user-centred approach ensures that new research is designed by users for users, and the multi-lateral nature of the labs means that finance is encouraged from multiple channels rather than being the responsibility of government or industry.

Everybody has a part to play in the labs, and unlike in Triple Helixes where partners have fixed roles, labs allow for greater fluidity in roles, finance, and activities. They encourage live and continuous disruption, and are therefore powerful in driving new thinking and innovation. As spaces, they bring together and facilitate researchers, multi-sector stakeholders (government, industry, citizens), and also finance, meaning that they can be argued to be a 'Quintuple Helix' and therefore enact ultra research spaces.

Examples

There are several examples of effective Lab thinking in existence:

https://enoll.org/network/living-labs/?country=Spain

QUT Urban Informatics

Brisbane Smart City

The Urban Informatics Lab at Queensland University of Technology (QUT) provides a learning and research space, which helps Brisbane to be a 'Smart City'. As the director puts it: "the Urban Informatics Lab provides a space, which is beyond what is conceived of as a smart city. It is more than just the technology; it is a people first approach". In other words, the lab assists the university in thinking beyond new technology R&D by thinking about practice. The goal is to create an open and agile smart city, not necessarily a high-tech city.

In practice, Urban Informatics applies diverse, and both established and novel methods of enquiry to identify challenges and opportunities in urban environments, across socio-cultural, economic, ecological, and technological spheres. This can involve innovative technologies, interventions, and services to respond to real life challenges and opportunities, through meaningful engagement with individuals and communities across the public, private, not-for-profit, and education sectors. It is only through this meaningful dialogue that the Lab can research and co-create urban futures that are more liveable and equitable. As they argue, it is only through a lab-based approach that they 'dare to ask difficult questions and go the extra mile in ensuring the most insightful, impactful outcomes'. Created in 2016, the research lab brings together researchers from multiple disciplines (computer science, technology, planning, architecture, business, arts) together with government and community stakeholders, users, and businesses.

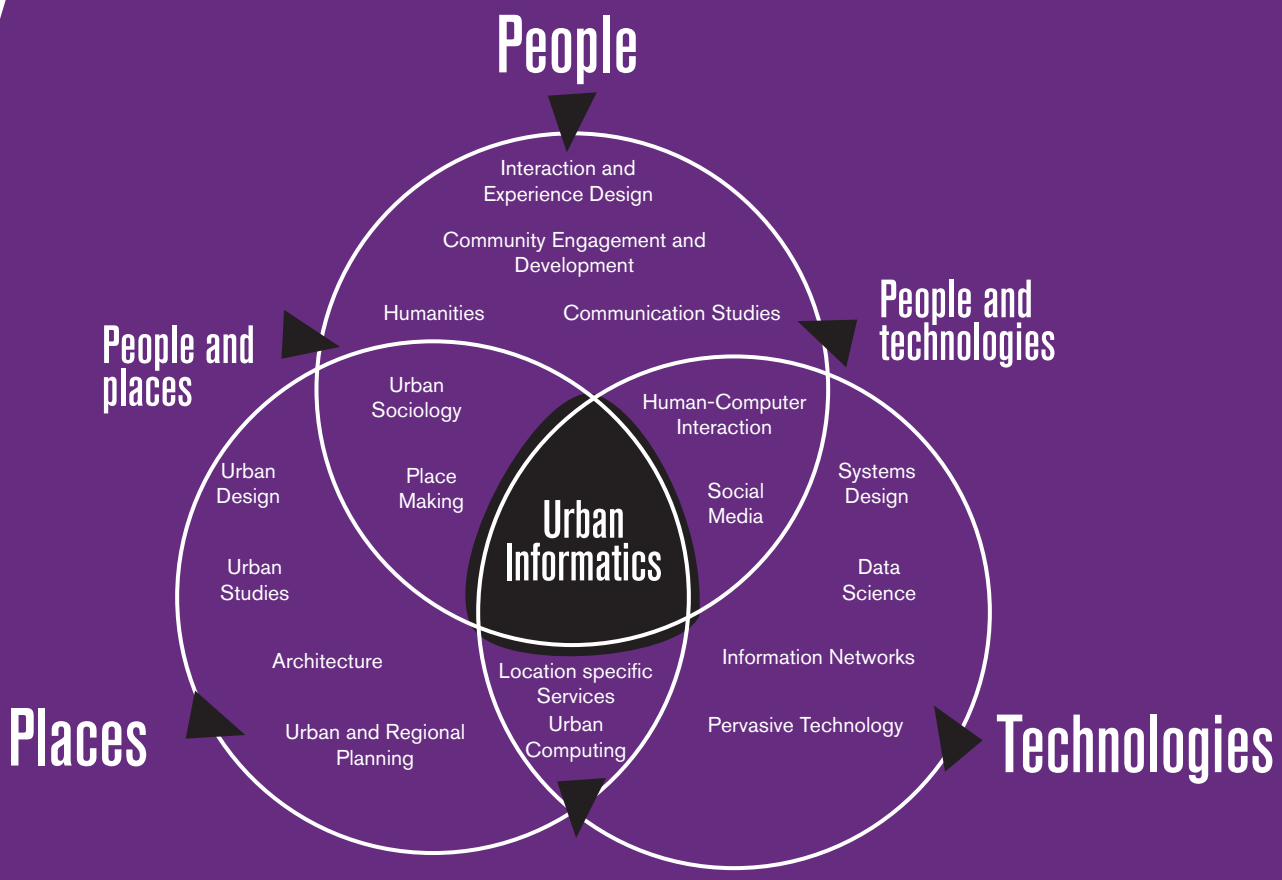

Fig.2 Urban Informatics

Together they investigate:

- Human-computer interaction, urban design, ubiquitous computing
- Examine, communicate and design how people, places and technologies come together to create urban experiences
- Identify challenges and opportunities on urban environments, across socio-cultural, economic, ecological and technological spheres
- Research and co-create urban futures that are more liveable and equitable

Examples of projects include:

- Enabling the Smart Citizen - supporting citizens in using open, urban data
- Instabooth - a situated community engagement project, using ICTs to encourage citizen engagement on the future of their local environment
- Reduce Your Juice - project aimed at assisting low-income households in better managing their energy/food use
- HSI After Dark - project supporting improved personal safety in Brisbane by designing solutions for citizens using the city after dark

https://www.urbaninformatics.net/contact/

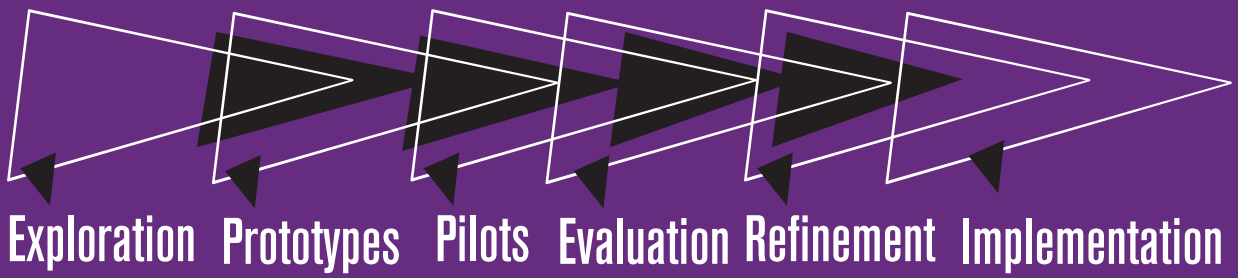

Fig.3 Space 10 common research/ideation/ implementation approach, found in design fields

Space 10

Innovation Lab, Copenhagen

Space 10 is a mixed innovation and living lab in Copenhagen, at the heart of the City's Kødbyen creative district. Created in 2016 by 4 industry artists and media specialists, it specialises in "playful research, which makes life more meaningful".

Operating initially as a product testing lab for Ikea (a role it continues today), it offers facilities for product testing and innovation, with Ikea being the primary sponsor of the lab. Its mission "to create a better and more meaningful and sustainable life for the many people" is a play on Ikea's motto to 'create a better life for the many' whilst also an acknowledgement of its core ideation and problem solving activities.

The Lab focuses on 3 main societal missions/developments, which are tackled through the Lab's facilities and programme:

1. **Circular Society**
   The Makery/Farm, which is responsible for testing new ideas
2. **Co-existence**
   Shared Living Lab, which co-develops new ideas with users on smart living with pop-ups around the globe
3. **Digital Empowerment**
   Digital Empowerment Lab, experimenting in new technological forms.

Their work programme comprises:

- Core team of 30 researchers
- Visiting researchers from around the world, including multinational companies
- Collaborators such as industry practitioners
- Community - or end users

The research lab at Space 10 genuinely disruptive. Everything they produce is open source and their reputation for being disruptive attracts big companies such as car manufacturers, retail designers, and oil and gas companies.

https://space10.io

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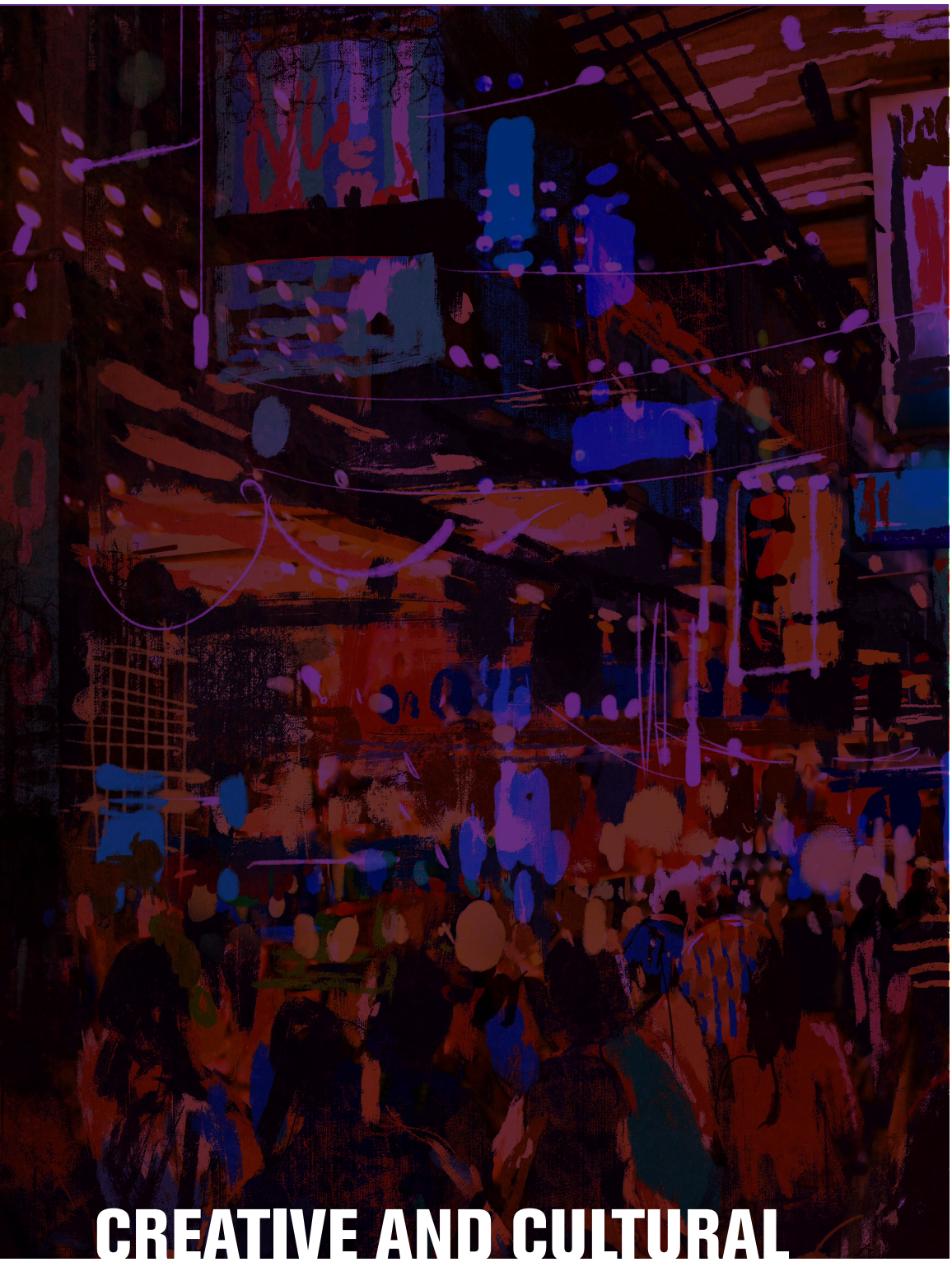

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